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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,110	12/12/2003	Pawan K. Nimmakayala	P122-64v18	1928

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EXAMINER	
TENTONI, LEO B	
ART UNIT	PAPER NUMBER
1732	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,110	NIMMAKAYALA ET AL.	
	Examiner	Art Unit	
	Leo B. Tentoni	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12122003;03122004;04082004;070120040;0404200507262005.

DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1732, Examiner Leo Tentoni.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-5 and 8-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The originally-filed specification fails to state or teach one of ordinary skill in the art what constitutes "similar radii of curvatures" (claim 3, line 4; claim 12, line 12) and also how and to what extent shear forces on the wafer are minimized (claims 11 and 20). Without this disclosure, one of ordinary skill in the art could not practice the claimed invention (*In re Wands*, 858 F.2d

731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988); MPEP 2164.01, 2164.01(a)).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 5 and in claim 5, line 3, "said layer" does not have clear and proper antecedent basis in the claims.

In claim 3, line 3, "said region" renders the claim indefinite principally because it is not clear if this refers to the layer or the wafer.

In claim 3, line 4 and in claim 12, line 12, "similar radii of curvatures" renders the claims indefinite principally because it is not clear what applicant intends to cover by such a recitation (e.g., it is not clear exactly how similar the radii of curvature must be).

In claim 6, lines 4-6, "bending further . . . second radius of curvature" does not have clear and proper antecedent basis in

the claims principally because claim 1 (from which claim 6 depends) does not positively recite a step of bending.

In claims 8-11, 15 and 17-20, the step of "bending" renders the claims indefinite principally because it is not clear if the step of bending applies to the mold, the wafer or both the mold and the wafer.

In claims 11 and 20: "minimizing the shear forces on said wafer" renders the claims indefinite principally because it is not clear what applicant intends to cover by such a recitation (e.g., it is not clear how and to what extent the shear forces are minimized); line 5 (in both claims), there appears to be one or more words missing after the word "arcuate".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al (article, "Novel Alignment System for Imprint Lithography").

White et al (see the entire document, in particular, page 3554, second column, first full paragraph to page 3555, first column) teaches a process including the steps of defining a region on a layer in which to produce a pattern, bending a mold and recording the pattern on the layer (White et al also teaches bending a wafer). White et al does not explicitly teach creating dimensional variations; however, this would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of White et al principally because White et al, just as in the instant process, teaches deforming (e.g., bending) a mold and/or a wafer, and such deformation changes the pattern (e.g., spacing of features) on a mold.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being obvious over Rubin (U.S. Patent 6,929,762 B2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2). Rubin (see the entire document, in particular, col. 5, line 61 to col. 6, line 62) teaches a process including

the steps of defining a region on a layer in which to produce a pattern, bending a mold and recording the pattern on the layer. Rubin does not explicitly teach creating dimensional variations; however, this would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Rubin principally because Rubin, just as in the instant process, teaches deforming (e.g., bending) a mold, and such deformation changes the pattern (e.g., spacing of features) on a mold.

10. Claim 1 is rejected under 35 U.S.C. 103(a) as being obvious over Choi et al (U.S. Patent 6,980,282 B2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned

by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2). Choi et al (see the entire document, in particular, col. 6, lines 17-38; col. 8, lines 19-64) teaches a process including the steps of defining a region on a layer in which to produce a pattern, bending a mold and recording the pattern on the layer. Choi et al does not explicitly teach creating dimensional variations; however, this would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Choi et al principally because Choi et al, just as in the instant process, teaches deforming (e.g., bending) a mold, and such deformation changes the pattern (e.g., spacing of features) on a mold.

11. Claims 2-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Rubin (U.S. Patent 6,929,762 B2) or Choi et al (U.S. Patent 6,980,282 B2) as applied to claim 1 above, and further in view of either Stagaman (U.S. Patent 5,563,684 A), Feldman et al (article, "Wafer Chuck for

Magnification Correction in X-Ray Lithography") or White et al (article, " Novel Alignment System for Imprint Lithography").

Stagaman (see the entire document, in particular, col. 5, line 47 to col. 6, line 53), Feldman et al (see the entire document, in particular, page 3476, second column) and White et al (see the entire document, in particular, page 3554, second column, first full paragraph to page 3555, first column) teach deforming (e.g., bending) a wafer, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of either Rubin or Choi et al in view of either Stagaman, Feldman et al or White et al principally in order to provide the wafer with a desired geometric shape (especially with respect to the mold).

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,929,762 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because varying a temperature would have been obvious to one of ordinary skill in the art at the time the invention was made principally in order to facilitate deformation of the mold or the wafer.

14. Claims 2-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,929,762 B2 in view of either Stagaman (U.S. Patent 5,563,684 A), Feldman et al (article, "Wafer Chuck for Magnification Correction in X-Ray Lithography") or White et al (article, " Novel Alignment System for Imprint Lithography").

Stagaman (see the entire document, in particular, col. 5, line 47 to col. 6, line 53), Feldman et al (see the entire

document, in particular, page 3476, second column) and White et al (see the entire document, in particular, page 3554, second column, first full paragraph to page 3555, first column) teach deforming (e.g., bending) a wafer, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Rubin in view of either Stagaman, Feldman et al or White et al principally in order to provide the wafer with a desired geometric shape (especially with respect to the mold).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo B. Tentoni whose telephone number is (571) 272-1209. The examiner can normally be reached on Monday - Friday (6:30 A.M. - 3:00 P.M.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leo B. Tentoni

Leo B. Tentoni
Primary Examiner
Art Unit 1732

lbt